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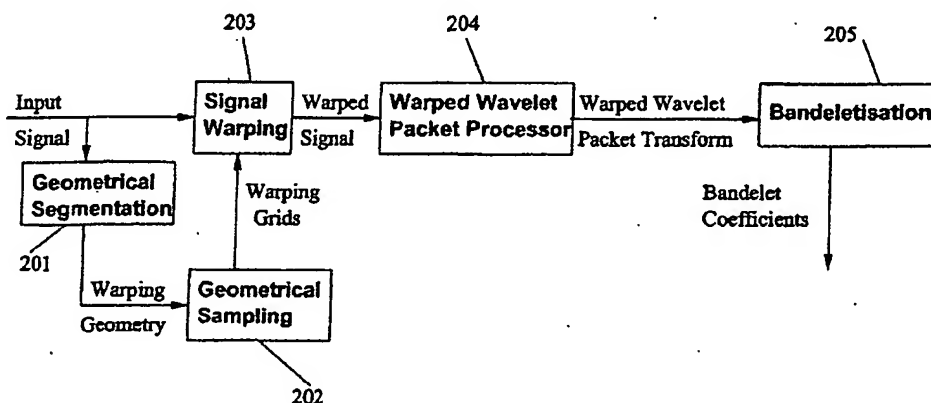
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(54) Title: PROCESSING OR COMPRESSING N-DIMENSIONAL SIGNALS WITH WARPED WAVELET PACKETS AND BANDELETS



(57) Abstract: A method and apparatus for processing or compressing an n-dimensional digital signal by constructing a sparse representation which takes advantage of the signal geometrical regularity. The invention comprises a warped wavelet packet transform which performs a cascade of warped subband filtering along warping grids of sampling points adapted to the signal geometry. It also comprises a bandeletisation which decorrelates the warped wavelet packet coefficients to produce a sparse representation. An inverse warped wavelet packet transform and an inverse bandeletisation reconstruct a signal from its bandelet representation. The invention comprises a compression system which quantizes and codes the bandelet representation, a decompression system, a restoration system which enhances a signal by filtering its bandelet representation, and a feature vector extraction system for pattern recognition applications of a bandelet representation.

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